

US009410893B2

(12) United States Patent Lai et al.

(10) Patent No.: US 9,410,893 B2

(45) **Date of Patent:**

Aug. 9, 2016

(54) BIO-CHIP PACKAGE WITH WAVEGUIDE INTEGRATED SPECTROMETER

(71) Applicant: TAIWAN SEMICONDUCTOR

MANUFACTURING COMPANY,

LTD., Hsinchu (TW)

(72) Inventors: Jui Hsieh Lai, Taoyuan (TW);

Ying-Hao Kuo, Hsinchu (TW)

(73) Assignee: Taiwan Semiconductor Manufacturing

Company, Ltd., Hsin-Chu (TW)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 179 days.

(21) Appl. No.: 14/087,010

(22) Filed: Nov. 22, 2013

(65) Prior Publication Data

US 2015/0146203 A1 May 28, 2015

(51) Int. Cl.

G01N 21/77 (2

(2006.01)

G01N 21/03 (2006.01)

(52) U.S. Cl.

CPC *G01N 21/7746* (2013.01); *G01N 2021/0346* (2013.01); *G01N 2021/7789* (2013.01)

(58) Field of Classification Search

CPC G01N 2021/0346; G01N 2021/7789; G01N 21/7746

See application file for complete search history.

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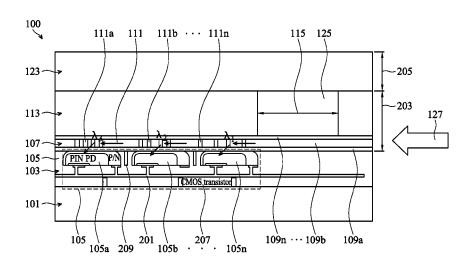
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Primary Examiner — Kara E Geisel
Assistant Examiner — Shawn Decenzo
(74) Attorney, Agent, or Firm — Slater Matsil, LLP

(57) ABSTRACT

A bio-chip package comprises a substrate a first layer over the substrate comprising an image sensor. The bio-chip package also comprises a second layer over the first layer. The second layer comprises a waveguide system a grating coupler. The bio-chip package also comprises a third layer arranged to accommodate a fluid between a first-third layer portion and a second-third layer portion, and to allow the fluid to pass from a first side of the third layer to a second side of the third layer. The third layer comprises a material having a predetermined transparency with respect to a wavelength of a received source light, the waveguide system is configured to direct the received source light to the grating coupler, and the image sensor is configured to determine a change in the wavelength of the source light caused by a coupling between the source light and the fluid.

20 Claims, 6 Drawing Sheets



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